

## 1626.5-1660 MHz

### 1. Band Introduction

The primary Federal use of the band 1626.5-1660 MHz is for earth stations in the Earth-to-space direction in conjunction with commercial mobile-satellite service (MSS) systems. This band is paired with the band 1525-1559 MHz which is used for space-to-Earth communications. The commercial satellite service providers include the London-based INMARSAT and the U.S.-based LightSquared. The Coast Guard and the Federal Aviation Administration (FAA) operate mobile earth terminals in the band in support of maritime and aeronautical emergency communications, respectively, via the INMARSAT commercial satellites. In addition to these emergency communications, the Federal agencies operate mobile earth terminals, including aeronautical, land, and maritime, using commercial satellite systems.

The National Aeronautics and Space Administration (NASA) also operates the Deep Space Network system 70-meter diameter antenna and associated receivers in Goldstone, California for radio astronomy research observations of the hydroxyl radical spectral lines for research of stellar and expansion velocities, validation theories of the origins, and evolution of the universe.

### 2. Allocations

#### 2a. Allocation Table

The frequency allocation table shown below is extracted from the Manual of Regulations and Procedures for Federal Radio Frequency Management, Chapter 4 – Allocations, Allotments and Plans.

#### *Table of Frequency Allocations*

##### *United States Table*

Federal Table	Non-Federal Table	FCC Rule Part(s)
1626.5-1660 MOBILE-SATELLITE (Earth-to-space) US308 US309 US315 US380 5.341 5.351 5.375		Satellite Communications (25) Maritime (80) Aviation (87)

**2b. Additional Allocation Table Information**

**US308** In the bands 1549.5-1558.5 MHz and 1651-1660 MHz, those requirements of the aeronautical mobile-satellite (R) service that cannot be accommodated in the bands 1545-1549.5 MHz, 1558.5-1559 MHz, 1646.5-1651 MHz and 1660-1660.5 MHz shall have priority access with real-time preemptive capability for communications in the mobile-satellite service. Systems not interoperable with the aeronautical mobile-satellite (R) service shall operate on a secondary basis. Account shall be taken of the priority of safety-related communications in the mobile-satellite service.

**US309** In the bands 1545-1559 MHz, transmissions from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links. In the band 1646.5-1660.5 MHz, transmissions from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.

**US315** In the bands 1530-1544 MHz and 1626.5-1645.5 MHz, maritime mobile-satellite distress and safety communications, *e.g.*, GMDSS, shall have priority access with real-time preemptive capability in the mobile-satellite service. Communications of mobile-satellite system stations not participating in the GMDSS shall operate on a secondary basis to distress and safety communications of stations operating in the GMDSS. Account shall be taken of the priority of safety-related communications in the mobile-satellite service.

**US380** In the bands 1525-1544 MHz, 1545-1559 MHz, 1610-1645.5 MHz, 1646.5-1660.5 MHz, 2000-2020 MHz, 2180-2200 MHz, and 2483.5-2500 MHz, a non-Federal licensee in the mobile-satellite service (MSS) may also operate an ancillary terrestrial component in conjunction with its MSS network, subject to the Commission's rules for ancillary terrestrial components and subject to all applicable conditions and provisions of its MSS authorization.

**5.341** In the bands 1 400-1 727 MHz, 101-120 GHz and 197-220 GHz, passive research is being conducted by some countries in a programme for the search for intentional emissions of extraterrestrial origin.

**5.351** The bands 1 525-1 544 MHz, 1 545-1 559 MHz, 1 626.5-1 645.5 MHz and 1 646.5- 1 660.5 MHz shall not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands.

**5.375** The use of the band 1 645.5-1 646.5 MHz by the mobile-satellite service (Earth-to- space) and for inter-satellite links is limited to distress and safety communications (see Article 31).

### 3. Federal Agency Use

#### 3a. Federal Agency Frequency Assignments Table

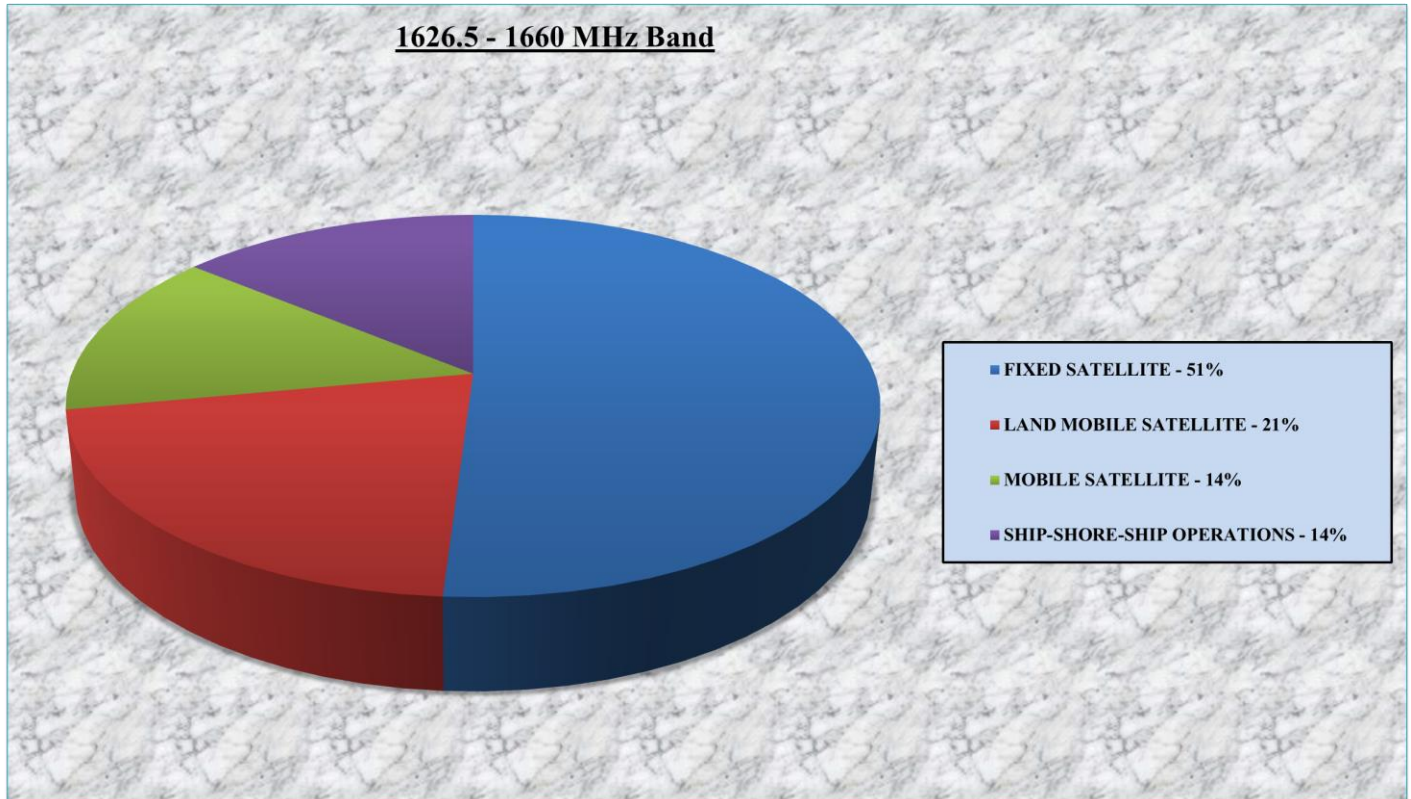
The following table identifies the frequency band, types of allocations, types of applications, and the number of frequency assignments by agency.

*Federal Frequency Assignment Table*

1626.5-1660 MHz Band						
SHARED BAND						
	MOBILE-SATELLITE (Earth-to-space)					
	FIXED SATELLITE	LAND MOBILE SATELLITE	MOBILE SATELLITE	SHIP-SHORE-SHIP OPERATIONS		TOTAL
AR			1			1
DOE		9				9
EPA	1					1
FAA	18					18
N			3	3		6
NASA	1		2			3
S	1			3		4
TRAN	1					1
<b>TOTAL</b>	<b>22</b>	<b>9</b>	<b>6</b>	<b>6</b>		<b>43</b>
The number of actual systems, or number of equipments, may exceed and sometimes far exceed, the number of frequency assignments in a band. Also, a frequency assignment may represent, a local, state, regional or nationwide authorization. Therefore, care must be taken in evaluating bands strictly on the basis of assignment counts or percentages of assignments.						

### **3b. Percentage of Frequency Assignments Chart**

The following chart displays the percentage of frequency assignments from the Government Master File for the services operating in the band 1626.5 – 1660 MHz.



## **4. Frequency Band Analysis By Radio Service**

The majority of the Federal use of commercial mobile-satellite service systems in this band is covered by FCC licenses and the GMF is not good indicator of Federal usage.<sup>1 2</sup> These communications often support the operation of mobile earth terminals anywhere in the United States and its Possessions (US&P), as well as in international air space and waters, and in many cases support emergency communications. Operation of mobile terminals with satellite systems offers service to locations out of reach of terrestrial commercial services and provides critical support during disasters or other emergencies.

The Coast Guard operates mobile earth terminals in the 1626.5-1645.5 MHz portion of this band for maritime emergency communications via the INMARSAT commercial satellites. These operations fall within the Global Maritime Distress and Safety System (GMDSS) of the

<sup>1</sup> See NTIA Manual Part 7.23, FEDERAL GOVERNMENT AGENCIES AS END USERS OF FCC LICENSED COMMERCIAL SERVICES.

<sup>2</sup> The majority of the GMF assignments are for emergency operations, including those for the FAA which operate through the LightSquared satellite system to support Air Route Traffic Control Centers and airports.

International Maritime Organization (IMO) which includes carriage of emergency beacons onboard various types of ships and vessels.<sup>3</sup> The Federal Aviation Administration (FAA) operates mobile earth terminals in the 1646.5-1660.5 MHz portion of this band for aeronautical emergency communications via the INMARSAT commercial satellites in the aeronautical mobile-satellite (R) service (AMS(R)S) during en-route oceanic flights as specified by the International Civil Aviation Organization (ICAO).<sup>4</sup> GMDSS and AMS(R)S have priority access with real-time preemptive capability for communications in the mobile-satellite service.

In addition to the GMDSS and AMS(R)S operations, the Federal agencies operate mobile earth terminals in the aeronautical, land mobile, and maritime mobile-satellite services using the Inmarsat and LightSquared commercial satellite systems. These operations are normally for locations out-of-reach of terrestrial commercial services and in many cases provide critical support during disasters or other emergencies.

The National Aeronautics and Space Administration (NASA) also operates the Deep Space Network system 70-meter diameter antenna and associated receivers in Goldstone, California for radio astronomy research observations of the hydroxyl radical spectral lines for research of stellar and expansion velocities, validation theories of the origins, and evolution of the universe.

## **5. Planned Use**

The Coast Guard requirements for access to band to support GMDSS maritime emergency communications will continue for the foreseeable future.

The FAA requirements for access to the band to support AMS(R)S aeronautical emergency communications will continue for the foreseeable future.

The Federal agencies will continue to operate mobile earth terminals using commercial satellite systems to support civilian and military communication requirements, including emergencies, for the foreseeable future.

The NASA radio astronomy use at Goldstone, California will continue to be required for the foreseeable future.

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<sup>3</sup> IMO is the United Nations agency concerned with international maritime activities.

<sup>4</sup> ICAO is the United Nations agency concerned with civil aviation.